imaging, and positron emission tomography. The bibliography (in small print) comprises 107 pages of the 2095-page text and the index another 47 pages.

This reviewer was fascinated by the chapter on muscle. Structure of muscle elements (sarcoplasm), innervation, characteristics of smooth muscle and the architecture of its fibers, and action of skeletal muscles are but a few of the topics addressed. Specific treatise on facial movements, mastication, respiration, coordinated movements of the upper limb, and standing and walking are completely analyzed.

The nervous system is the largest chapter (400 pages), and the phylogenetic origin of the nervous system and modern development in structure and function are only a few of the topics discussed in this encyclopedic chapter. It also contains beautifully diagrammed illustrations of the ultrastructure of the synapse. There were discussions of reward and addiction, both of which originate in the midbrain, a review of variations and adaptation to stress, and a section dealing with the major cerebral lesions and their impact on brain tissue. The peripheral and the autonomic nervous system are beautifully displayed by anatomic drawings and schematic diagrams.

The cardiovascular chapter constituted 174 pages, had a detailed exploration of the heart and great vessels, and described both functional and anatomic issues. The extracranial vascular anatomy was illustrated with adequate but not eloquent arteriography. No subtraction views were offered. One of the most exquisite illustrations of an oblique vertical section through the cranial base showed the relationship of the interior carotid artery and the jugular vein and the cavernous sinus. This illustration, however, was not from Gray but was from Pernkopf's 1963 atlas!

The detail of aortic and lower extremity vascular anatomy was adequate, but the importance was misfocused somewhat. Three selective inferior mesenteric artery arteriograms emphasized (1) a visceral branch occlusion; (2) the pelvic arterial connections; and (3) intramural colonic circulation around Sudeck's point. There was no emphasis placed on oblique orientation of contrast images to show arteries in the groin, for example. The venous segment was clear, and drawings, using the color blue, added substantially to this section.

The chapter on surface anatomy was extremely useful and built up the human figure in various projections from the skeleton through the musculature and the vascular systems.

This classic anatomic text published by Churchill Livingstone is a reference that would be hard to replace. It is accessible to students, trainees, and the medical professionals who may require it at times during their training or career. It is a complete treatise and contains materials not always relevant to a given subject. Nevertheless, one can be assured that for the answer to complex anatomic problems, H. Gray will surely supply the answer.

Ronald Stoney, MD
University of California, San Francisco
San Francisco, Calif.

The molecular and cellular biology of wound repair

Richard Clark; New York; 1996; Plenum; 611 pages; $125.

The second edition of *The Molecular and Cellular Biology of Wound Repair* is a comprehensive review of wound repair, including both abnormal and normal healing. It is stated in the preface that the book is intended to be a "bridge between the basic sciences and the bedside" rather than a detailed treatise of molecular and cellular biology. In that respect the editor has failed, as this is much more of a comprehensive review and detailed reference than the former. Clinicians and particularly vascular surgeons will find this a very detailed and comprehensive review when looking up specific areas of interest.

The review is so extensive that it should be considered a mandatory reference text for anyone doing basic research in the area of wound healing. I doubt that many would actually sit down and read this as a text on its own. When comparing this edition to the first, one concludes that this is a significant revision with considerable reorganization and new material.

The book is divided into four major parts: Part I, Preliminaries (which is essentially a review of wound healing); Part II, Growth factors in soft tissue healing; Part III, ew tissue formation; and Part IV, The essentials of tissue remodeling. As mentioned by the editor, Chapter 5 in its description of the work on epidermal growth factor leading to the nobel prize for Stanley Cohen was particularly interesting. The work described in Chapter 18 describing repair without scarring in fetal tissue and its possible application to wound healing in adults is fascinating and may be especially helpful to plastic surgeons interested in the area of wound healing.

Vascular surgeons who will be particularly interested in this text includes those with laboratories devoted to research in fibrointimal hyperplasia. I found part II of the text interesting and most applicable to research related to vascular surgery. he book is well-written overall, and the diagrams are nicely drawn. The diagrams have a cartoon-like quality to them that I found refreshing and easy to understand. The micrographs are black and white, which is somewhat disappointing. Many of the micrographs would have been more informative in color. The one color figure was appreciated but probably unnecessary. The electron micrographs are crisp and detailed.

In summary, I believe this text will be an essential reference for those laboratories involved in the science of wound repair. However, its use to the clinical vascular surgeon will be selective. The book is well-written and extremely well-referenced.

Jon Cohen, MD
Long Island Jewish Medical Center
New Hyde Park, N.Y.

The handbook of dialysis access

David Eisenbud; Columbus, Ohio; 1996; Anadem; 131 pages.

This manual provides an overview of the surgical aspects of dialysis access. The author admits from the onset

that the content of the handbook is based on his personal experience in the field and candidly offers no apology for the lack of academic rigor. Not surprisingly, there is little data throughout the text, and much of the information presented as factual really represents the author's bias and opinions. More discussion and references regarding debatable issues would have improved this manual. Nevertheless, there is a great deal of common sense and practical advice in this text that would be useful for those who are taking a first glance into the field of dialysis access. This handbook is very brief and can be read in a few hours. The chapters are well organized and cover the entire process involved in the care of patients who require access for dialysis. The chapters, although short, convey the essential information well. The style is colloquial and easy to understand, appropriate for material presented at a basic level. The terminology used in the text is not exactly rigorous. Such is the case of the term "gelatinoma," used in reference to the accumulation of plasma proteins around a prosthetic graft.

The technical aspects of access surgery are easy to understand and nicely illustrated but treated too superficially to be of significant help to those seeking guidance in surgical technique. Secondary dialysis access is briefly covered. There is a chapter dedicated to transcriptions of operative reports, which I find curious. Those who need to read how to dictate an operative note on dialysis access probably should not be doing it!

This text is appropriate for those with little knowledge on the topic, and who need a primer on the basic principles of dialysis access. Senior surgical residents and surgeons will be disappointed. This book is excellent for medical students, nurses, junior residents, or anyone looking for a concise overview on dialysis access. Those seeking meaningful data or technical advice should look elsewhere.

Enrique Criado, MD
University of North Carolina
Chapel Hill, N.C.

Modern management of renovascular hypertension and renal salvage

Keith Calligaro, Matthew Dougherty, and Richard Dean; Baltimore; 1996; Williams & Wilkins; 313 pages.

This concisely well-written book contains 294 pages excluding the index. This book is divided into three parts with 18 chapters. In this short format, the editors manage to discuss the state of the art of renal vascular hypertension.

The first section of the book, entitled "Pathophysiology and diagnosis of renal artery disease," begins with chapters on pathophysiology and natural history of renal artery disease, followed by a discussion of the diagnosis of renal vascular hypertension with specific chapters on ultrasound, arteriography, and magnetic resonance imaging. These three chapters on diagnosis of renal vascular hypertension succinctly summarize current thinking in this area.

The second section of the book is entitled "Indications for renal artery revascularization for renal vascular hypertension and renal salvage." This section is authored by physicians who are at the forefront of treatment of renal vascular hypertension. The strength in this section lies not only in its surgical-based chapters, but also in its use of leaders from other fields. The chapters written by Drs. Martin, Sos, and Trost are well-written and informative. They serve to balance what could have been a section based only on surgical principles. In sharp contrast is a chapter included in this section written by a leading urologist that is quite superficial and lacks any new information.

The final section of this book is entitled "Surgical technique for renal vascular hypertension and renal salvage." Many of these five chapters are summaries of recent articles written by the authors. This serves as a good review despite the lack of new information. Most practicing vascular surgeons perform few renal artery procedures. For that reason, the reviews published in these last five chapters will serve the practicing vascular surgeon well.

Overall, I found this book well-edited and easy to read. The purpose of this book is to provide a comprehensive reiew of current knowledge concerning renal vascular disease. I believe the authors have achieved their goal. The editors state in the preface that the most-respected authorities in the field have contributed to this book. I believe they are correct. I recommend this book to the practicing vascular surgeon, not only to update his knowledge as to the current state of the art, but also to serve as a reference and review for the different techniques of renal revascularization.

Samuel R. Money, MD
Ochsner Clinic
New Orleans, La.

Surgery for cerebrovascular disease, 2nd edition

Wesley Moore; Philadelphia; 1996; W. B. Saunders; 713 pages; $210.

The second edition of *Surgery for Cerebrovascular Disease* consolidates the justifiably high reputation of the previous edition. New contributors from different disciplines have added extra chapters, including some not usually found in surgical texts. Risk factor modification, natural history, and medical management are notable examples. A consensus statement from the American Heart Association advises how asymptomatic carotid stenosis should be managed. Representatives of other authoritative bodies include data from the North American and European trials, the Rand Corporation, and similar institutions. The material covered ranges from epidemiology including financial modeling, through the pathology and pathophysiology of different lesions, to modern diagnosis and management algorithms.

Topics of special interest to surgeons are discussed in considerable depth, with chapters on the techniques of arteriotomy closure, the use of shunting, and intraoperative assessment of the completeness of carotid endarterec-